

THE PRODUCTION OF VACCINE.

With the exception of Mr. Ceely, of Aylesbury, Mr. Badcock, of Brighton, is the only one who, it appears, has, in this country, attempted to identify the small-pox with cow-pox virus, and to transfer the one from the other.

In Mr. Badcock's opinion, the cows used to suffer from the small-pox much more frequently years ago than they do now, since vaccination has become general, and helped in diminishing the disease. His attention was first drawn to this subject by the frequent occurrence of the small-pox after vaccination, in late years. He himself suffered from it, after vaccination; and it was this misfortune which led him to suspect the efficacy of the vaccine virus in vogue. He looked out for cow-pox among the cows, but found the malady such as Jenner describes it, scarcely known in the dairies. He then inoculated a cow with the small-

pox virus, in 1840. A pamphlet, published as far back as 1807, by Mr. Pruen, entitled "A Comparative Sketch of the Variolous and Vaccine Virus," first awakened his mind to this idea. He invited several medical men to inspect the vesicle he had produced on the animal, and they agreed in their judgment of its genuine character. By means of the matter taken from this cow, thus inoculated, he vaccinated one of his own children, and produced the true vaccine vesicle. His expectations were answered: other children were next vaccinated with the matter taken from his own child, as well as with that taken from the cow; and the results were equally favourable. More than twenty medical men examined his own child during the progress of the vaccine vesicle, and many of them requested supplies of lymph from its arm, in order to ascertain its effects on others under their care. It did not disappoint any one of them. It was beyond dispute that Mr. Badcock had, in fact, succeeded in engendering and propagating a fresh supply of primary lymph.

Soon afterwards Mr. Ceely's similar experiments of 1838, published in the "Provincial Medical Journal, 1840," became known to him, which encouraged him to persevere in his pursuit. Residing in a populous town, where the small-pox is not unfrequent, and possessing cows of his own, which he could appropriate to this particular purpose, he

was enabled to inoculate some of them ; and out of 300 attempts on 200 cows, succeeded in infecting about 30 with the small-pox virus. The result of the operation is very uncertain. Mr. Ceely owns that he was frequently unsuccessful. The most susceptible cows are those with calf : Mr. Badcock never succeeded with a barren cow ; he was once successful on a cow-calf, three weeks old.

Mr. Badcock, who is acknowledged to be an expert operator in this respect, has vaccinated about 12,000 children, with matter drawn from this source. The medical men in Brighton have frequently used the same matter for vaccinating their patients with. This circumstance is very well known. During one month Mr. Badcock supplied above 800 charges of the same matter, in this town alone, besides that which he is in the habit of distributing to medical practitioners resident elsewhere. This new vaccine has been used also at the London Small-pox Hospital, and approved of ; nor does it appear that any medical man has ever doubted the genuineness and efficacy of the lymph thus obtained. Children after being vaccinated with it, have slept in the same bed with those sick of the small-pox, without catching the disease. Mr. Ceely submitted it to the very trying test of subsequent inoculation with the small-pox, but without effect. The surgeon of the parish of Brighthelmston has continued

carrying on his vaccination from a stock of lymph originally drawn from one of Mr. Badcock's cows, some time since, nor would he willingly relinquish it. It would appear that there is good ground for believing this new vaccine virus, or modified small-pox, to be superior to the old in intensity of action, and in certainty of protective power.

Mr. Badcock, who has watched its progress and effects with the closest attention, is convinced of its superiority. As far as his observation has extended, he has not known of one failure. Primary lymph of this description is most valuable in cases of re-vaccination; for if the constitution should be still open to infection, this lymph rarely fails in taking immediate effect.

The intensity with which it acts is no reason against its use. Extensive inflammation sometimes follows the use of the old vaccine virus; for there is no guarding against peculiarities of health and strength. But this event is rare, and depends upon circumstances over which we have no control. No one pretends to say that vaccination may not be attended with symptoms of an unusual character; but those attendant on primary lymph are not different from those of ordinary vaccination, but simply more intense.

The decline of the old vaccine lymph has been noticed by competent, as well as independent ob-

servers, in every quarter of the globe. Mr. Ceely, in a letter to Dr. Golding Bird, Dec. 1851, remarks—"that variolous lymph can be, and has been deteriorated by a variety of causes, is indisputable. The fact is notorious in India.—(Quarterly Journal, Calcutta Medical and Physiological Society, April 19, 1837.) It has been proved in Paris.—(Notice sur le Cow-pox, decouverte a Passy, par M. Bousquet, 1836.) It has been demonstrated in London.—(Report on Small-pox, by Dr. Gregory; Medical Gazette, Feb. 24, 1830.) That it may be rendered weak and inefficient by accident or carelessness, by ignorance or something worse, every experienced vaccinator will readily allow."

The inefficiency of the vaccine virus now in use has manifested itself in America. Application was made to Mr. Badcock, of Brighton, for fresh vaccine, and his new lymph was introduced into the New World by Dr. Coale, of Boston, and was so much approved by Dr. Clark and the other medical men connected with the Massachusetts General Hospital, that it has been adopted by them to the exclusion of all other vaccine lymph hitherto employed at that institution.

By a careful comparison of the old with the new vaccine virus, the difference observable between them is just on that point which would greatly recommend the new in preference to the old. It

is this,—that the new is more infective and energetic ; two qualities of the highest value in every case admitting of no delay. The first failure in cases exposed to infection from small-pox might endanger the patient's safety ; and other emergencies are constantly arising, in which uncertainty is hazardous, or even culpable.

The very careful and experienced practitioner of this town, already mentioned above, has confined himself to the use of Mr. Badeock's vaccine for five years past, and he speaks of it with the greatest confidence. Indeed, the time may arrive when the Brighton stock of vaccine virus may be referred to as evidence of the superiority of the lymph fresh from the cow, over that which has been in use ever since the time of Jenner ; and it is to Mr. Badcock alone that we are indebted for the new supplies that have now been in circulation for more than ten years past. The difficulty of keeping up this supply is very great. It involves a great deal of time, care, and expense ; and few persons will be tempted to undertake the continuance of it. At present it rests with Mr. Badeock alone.

Mr. Badcock exhibited some protographic drawings of the vesicles, produced by the lymph drawn from his cows, at the Great Exhibition of 1851. They give the exact character and appearance of the vaccine vesicle, and no one, at the first glance,

could mistake them for anything else. This way of shewing the nature of the eruption is the more convincing, because it appeals to the sight, the most satisfactory evidence we possess, and is the more likely to prove, to such as are sceptical in this matter, the truth of the pretensions now put forward.

